Ellis K.Hirst

C17926

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## ROUTE NOTES I. For additional details of Terminal System (Type ET), refer to the manufacturer's installation instructions. Ellis Terminal System (Type ET) must be constructed so that the full length of the terminal system guard railing is in straight alignment. The Guard Rail Extruder head of the terminal system shall not encroach upon the adjacent payed shoulder or lane. A traffic approach flare of 50:1 for the full length of Terminal System (Type ET) installation shall be 150 mm × 200 mm × 355 mm July 1, 2002 used where the Guard Rail Extruder head would encroach upon the adjacent paved shoulder or lane. ,185 mm × 135 mm × 1145 mm 3. Slide Guard Rail Extruder over the end of the rail element and attach to Post No.1 with lag screws. Do not bolt rail wood block te State of California or its officers or (7<sup>1</sup>/<sub>4</sub>" × 5<sup>1</sup>/<sub>4</sub>" × 3′-9") element to post. Guard Rail Extruder attachment brackets have 3 holes in each bracket to provide tolerance adjustment. MBGR element iness of electronic contes of this . Use the holes in the bracket closest to center of Post No.1. Drill 6 mm (1/4") pilot holes to accommodate lag screws. Top of roil Hex nut and washer 4. Attach strut to Post Nos. I and 2 foundation tubes with hex head bolts, washers and hex nuts. Bolts extend alfrans naw has a web site! To get to the web site, an to; http://www.dof.ca. on threaded end through the strut, steel foundation tube, and wood posts. Channel side of strut to face downward. Pavement or 13 mm ( $\frac{1}{2}$ ") ø Hex head bolt (No washer on bolt head) ground line MRGR element 150 mm × 200 mm × 355 mm 5. For length and type of guard railing or barrier the terminal system is attached to, see Project Plans. For minimum (6" x 8" x I-2") wood block Top of rail length of guard railing used with terminal system end treatments, see Standard Plans A77D and A77E. 185 mm (7½") Hex nut (5%" )and washer on threaded end Payement or 6. Attach rail element to this post and block. Payment for this post, block and hardware included in payment for the type -60 mm (23/4") ø hole ground line of railing or barrier the terminal system is attached to, not part of the payment for Terminal System (Type ET). 4-6 mm (<sup>1</sup>/<sub>4</sub>") thick steel plate 460 mm × 610 mm (18" × 24") Yellow retroreflective sheeting, as provided by Terminal System (Type ET) manufacturer, shall be adhered to the face (No washer on bolt head) of extruder head. The sheeting shall be consistent with the design pattern and colors of a Type P object marker panel. Attach steel soil plate to steel foundation E | % tube with 16 mm ( $\frac{5}{6}$ ")ø x 190 mm ( $\frac{7}{2}$ ")hex head bolts with hex nuts (21mm ( $\frac{15}{6}$ ")ø holes in plate and in two sides of tube to accommodate hex bolt). 8 Attach rail to Post No 2 (no wood block) in same mapper shown in section A-A. Do not bolt rail to Post No I See Note 3 -90 mm (31/2") ø holes 9. Terminal System (Type ET) is an in-line end treatment for guard railing or single faced barrier railing where site conditions will not accommodate use of a flared end treatment. Do not use Terminal System (Type ET) where extrusion of the rail on the back side of the installation would be in the path of pedestrian or vehicular traffic. Steel foundation tube 200 mm (8") TS 203 × I52 × 4.8 (TS 8 × 6 × 1/4") 1375 mm (4'-6") length, See Note II. 10. A continuous rail element section between Post Nos. I and 5 (no intermediate rail splices) may continue to be used in existing installations. New installations shall be constructed as shown. SECTION A-A SECTION B-B 11. A 1830 mm (6'-0") length steel foundation tube. TS 203 x 152 x 4.8 (TS 8 x 6 x \frac{\frac{1}{2}}{2}), without a soil plate, may be furnished Soil plate and wood post attachment and installed in place of the 1375 mm (4'-6") length steel foundation tube and soliplate shown. Minimum embedment of to steel foundation tube similar Post Nos. 5, 7 and 8 similar except rail the 1830 mm (6'-0") length tube shall be 1760 mm (5'-9"). A 16 mm (5%") ø hex head bolt and nuts shall be installed for Post Nos. 1, 2 and 4, Wood blocks not elements are not attached to Post Nos 5 and 7 in the hole in the 1830 mm (6'-0") length tube to keep the wood post from dropping into the tube. used with Post Nos. I and 2. See Note 8. Attach strut to foundation tube with bolt head on this side. See Note 4. Pay Limits for Terminal System (Type ET) Limits of guard Guard Rail Element Exit Slot (Positioned railing or barrier to exit rail element away from traffic) Strut railina See Note 5 (See Note 2) See Notes 2 and 7 650 mm Guard Rail Extruder PLAN Edge of paved shoulder or offset (25 1/2") Extend bolt through post line of edge of traveled way. and block but not through Direction of Travel rail elements at One continuous length of guard rail element Post Nos. 3, 5 and 7; Wood Post 1905 mm (6'-3") /1905 mm (6'-3") 1905 mm (6'-3") 1905 mm (6'-3") 1905 mm (6'-3") \_\_\_ 1905 mm (6'-3") 1905 mm (6'-3") No. 1, See Section A-A See Note 10 Rail splice See Note 10 Cable See Note 3 **-←**B) Anchor Rail splice Rail splice Rail splice Anchor bracket cable 1000

**ELEVATION** TERMINAL SYSTEM (TYPE ET) See Notes 9 and 10

Wood Post

No. 5, See Section B-B

Wood Post

Soil plate

foundation

Steel

tube.

No. 4, See Section A-A

Wood Post

No. 3

Wood Post

No. 2. See

-Soil plate

foundation.

Steel

tube.

Section A-A

## STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION METAL BEAM GUARD RAILING AND SINGLE FACED BARRIER RAILING TERMINAL SYSTEM **END TREATMENT**

Bearing plate for anchor

cable

These "Standard Plans for Construction of Local Streets and Roads" contain units in two systems of measurement: International System of Units (SI or "metric") and United States
Standard Measures shown in the parentheses (). The measurements expressed in the two systems are not necessarily equal or interchangeable. See the "Foreword" at the beginning of this publication.

NO SCALE

A77M

Wood Post

No. 6

Wood Post

No. 8, See

Section B-B

Wood Post

No. 7, See Section B-B

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Pavement or

ground line